

CLAIMS

1. A method, comprising:
 - spinning a substrate having a film;
 - scanning an optical sensor across a path along a surface of the substrate;
 - sensing properties of the film with the optical sensor at a plurality of points along the path; and
 - generating a map of the film using information from the plurality of points along the path.
2. The method of claim 1, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.
3. The method of claim 1, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.
4. The method of claim 1, wherein the sensing properties of the film with the optical sensor includes the gathering of light reflected off the surface of the substrate.
5. The method of claim 1, wherein the generating a map includes performing analysis of light reflected off the surface of the substrate and applying the results in one of a graphical representation and a text format representation.
6. The method of claim 1, further comprising:
 - scanning an inductive sensor across a path along the surface of the substrate.

7. The method of claim 6, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.

8 The method of claim 6, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.

9. The method of claim 6, wherein the inductive sensor is capable of providing material properties of conductive materials on the surface of the substrate.

10. The method of claim 6, wherein the generating a map includes information obtained from the optical sensor and the inductive sensor provided in one of a graphical representation and a text format representation.

11. A method, comprising:
 - scanning an optical sensor across a path defined along a surface of a substrate having a film when the substrate is spinning; and
 - sensing properties of the film with the optical sensor at a plurality of points along the path; and
 - generating a map of the film using information from the plurality of points along the path.
12. The method of claim 11, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.
13. The method of claim 11, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.
14. The method of claim 11, wherein the sensing properties of the film with the optical sensor includes the gathering of light reflected off the surface of the substrate.
15. The method of claim 11, wherein the generating a map is accomplished by performing analysis of light reflected off the surface of the substrate and applying the results in one of a graphical representation and a text format representation.
16. The method of claim 11, further comprising:
 - scanning an inductive sensor across a path along the surface of the substrate.

17. The method of claim 16, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.
18. The method of claim 16, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.
19. The method of claim 16, wherein the inductive sensor is capable of providing material properties of conductive materials on the surface of the substrate.
20. The method of claim 16, wherein the generating a map includes information obtained from the optical sensor and the inductive sensor provided in one of a graphical representation and a text format representation.
21. A method, comprising:
 - scanning along a path defined over a region that is to define a surface of a substrate that can have a film, the substrate being configured to spin when present; and
 - sensing properties of the film at a plurality of points along the path; and
 - generating a map of the film using information from the plurality of points along the path.
22. The method of claim 21, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.

23. The method of claim 21, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.
24. The method of claim 21, wherein the sensing properties of the film with the optical sensor includes the gathering of light reflected off the surface of the substrate.
25. The method of claim 21, wherein the generating a map is accomplished by performing analysis of light reflected off the surface of the substrate and applying the results in one of a graphical representation and a text format representation.
26. The method of claim 21, further comprising;
scanning an inductive sensor across a path along the surface of the substrate.
27. The method of claim 26, wherein the path of the scanning is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.
28. The method of claim 26, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.
29. The method of claim 26, wherein the inductive sensor is capable of providing material properties of conductive materials on the surface of the substrate.

30. The method of claim 26, wherein the generating a map includes information obtained from the optical sensor and the inductive sensor provided in one of a graphical representation and a text format representation.

31. An apparatus, comprising,
a substrate holding and rotating mechanism; and
an arm, the arm including,
an optical sensor that can be scanned over a surface of the substrate, the optical sensor being configured to sense properties of a film that can be present on the surface of the substrate, the optical sensor being configured to sense the properties at a plurality of points along a path that the arm is capable of traversing over the surface of the substrate.

32. The apparatus of claim 31, further comprising:
a data processor being in communication with the optical sensor, the data processor being capable of receiving the properties sensed by the optical sensor.

33. The apparatus of claim 32, wherein the data processor is capable of generating a map of the substrate using the properties sensed by the optical sensor.

34. The apparatus of claim 33, further comprising;
a sensor capable of being attached to the arm and capable of detecting conductive material properties and in communication with the data processor, the data processor being capable of receiving the properties sensed by the sensor that can be present on the surface of the substrate, the sensor being configured to sense the properties at a plurality

of points along a path that the arm is capable of traversing over the surface of the substrate.

35. The apparatus of claim 34, wherein the properties include one or a combination of film thickness, index of refraction, extinction coefficient, conductivity, surface roughness, and topography height variations.

36. The apparatus of claim 34, wherein the sensor capable of measuring conductive materials is an inductive sensor.

37. The apparatus of claim 4, wherein the path is from the edge of the substrate to the center of the substrate affecting a path over the surface of the substrate.

38. The apparatus of claim 34, wherein the sensor is configured on a second arm, the sensor being configured to sense the properties at a plurality of points along a path that the arm is capable of traversing over the surface of the substrate.

39. The apparatus of claim 38, wherein the path of the scanning is from the center of the substrate to the edge of the substrate affecting a reverse path over the surface of the substrate.

40. An apparatus, comprising,
a substrate holding and rotating mechanism;
an arm, the arm including,

an optical sensor that can be scanned over a surface of the substrate, the optical sensor being configured to sense properties of a film that can be present on the surface of the substrate, the optical sensor being configured to sense the properties at a plurality of points along a path that the arm is capable of traversing over the surface of the substrate;

the optical sensor comprising,

an illumination source, the illumination source capable of flashing;

a spectrograph, the spectrograph capable of collecting and analyzing a signal reflected from the substrate;

an inductive sensor capable of detecting conductive material properties at a plurality of points along a path that the arm is capable of traversing over the surface of the substrate; and

a data processor, the data processor being capable of receiving the properties sensed by the optical sensor and the inductive sensor, controlling the operation of the arm and the substrate holding and rotating mechanism and producing a map, the map graphically indicating the properties sensed.

41. Computer readable media embodying computer code having program instructions, the program instructions comprising:

program instructions for controlling spinning of a substrate having an film;

program instructions for controlling scanning of an optical sensor across a path along a surface of the substrate;

program instructions for controlling sensing of properties of the film with the optical sensor at a plurality of points along the path; and

program instructions for controlling generation of a map of the film using information from the plurality of points along the path.